

Title (en)

APPARATUS FOR DETERMINING THE MASS AND THE DENSITY

Title (de)

VORRICHTUNG ZUR BESTIMMUNG DER MASSE UND DICHT

Title (fr)

APPAREIL POUR LA DETERMINATION DE LA MASSE ET DE LA DENSITE

Publication

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Application

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Abstract (en)

An electromechanical device to sustain the oscillations of a vibrant mass useful for applications where it is necessary to know the mass and /or the density is described . A metallic or metalized tube, electrically conductive in all its length, in presence of a magnetic field performs, via an special designed circuit, the drive and the detection of the vibrations, avoiding the presence of additional elements of excitation or detection attached to the util part of the tube (vibrant part). To obtain this effect, it has been necessary to develop adequate circuits of detection, amplification, and control of the amplitude. The developed electronic design permits to amplify only the electric signal due to the vibration of the mechanical resonator, and to use this signal to maintain the vibration. This, together with the use of a very precise oscillation amplitude control, produces sinusoidal vibrations, completely free of harmonics. <IMAGE>

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